

Control of Hardwoods in Cutover Areas

Tennessee Department of Agriculture, Division of Forestry

Pine can sometimes be planted without controlling hardwood vegetation (on poor sites where the timber was cut very cleanly within the last year or possibly two). However, even in this situation control of competing vegetation is a good investment that will result in higher yields and higher returns. Even if the site looks clean now, vegetation will soon grow up and compete with the pine.

In any of the following cases use of herbicide is absolutely necessary in order to establish a pine plantation:

- highly productive soils found in hollows and bottoms
- areas where many cull trees were left standing following the harvest
- areas where it has been several years since harvest and vegetation has grown back

If the area has grown up and is difficult to walk through, it will be very difficult to plant. Fire is effective at clearing thick, low vegetation (such as grass and weeds) but it is not very effective at clearing briars and trees over head high if there is not ample fuel on the ground to support the fire. In these cases it is necessary to bulldoze to clear the brush.

Several herbicides are available for controlling competing vegetation in pine plantations. The most widely used is Arsenal. Arsenal can be applied either before planting (site preparation) or after planting (release). If used as labeled, Arsenal does not harm pines. Arsenal is sprayed in mid-summer to early fall (from July to when leaves start to turn color – about October 15). Because it is applied late in the growing season, results are not highly evident until the following spring.

Velpar is also effective. It is best sprayed before trees are planted. Spray in late spring to early summer and plant the seedlings the following year. **Velpar** can also be sprayed after seedlings are planted, but extreme care must be used or the planted trees may be damaged.

Herbicides can be mixed to provide better control in specific situations. For instance, **Accord** (**Roundup** labeled for forestry) may be added to Arsenal to provide broader control and a quick brown-up to facilitate prescribed burning prior to planting. **Escort** can be added to Arsenal to control legumes such as black locust or redbud.

The choice between site preparation and release (spraying before or after planting) depends on many factors. Some of the most important are:

- Heavier rates are used for site preparation, which costs more but results in better control
- The best long term release is obtained two growing seasons after harvest. However, during this time the seedlings are subject to competition
- With release there is no delay in planting seedlings
- With release the seedlings can be observed over several years to see if spraying is necessary
- If pine is to be replanted on areas that were previously in pine and the pine was harvested in July or later, planting should be delayed one season to avoid a pest called Pales weevil.

The cost of spraying depends on several factors but most importantly on the amount of herbicide used. High rates are more expensive, but are more effective and long lasting. In 2001 the average cost is \$85 per acre

If ground crews are used, **Arsenal Concentrate** is mixed with water to form a ½% solution (one pint in 25 gallons). Add a surfactant or penetrant such as **Cide-Kick**, **Ortho X-77** or **Timberland 90** to at least a ¼% solution. The foliage of small trees, brush, shrubs and vines is sprayed with this solution not to the point of runoff with a backpack sprayer. Use 12 to 16 ounces of **Arsenal** per acre. The amount used depends on the amount of foliage sprayed. A small amount of **Arsenal** on pine seedlings will not harm them, but avoid spraying directly on them. 12 ounces **Arsenal** with one ounce **Escort** is a good combination.

All vegetation too large for at least 2/3 of the foliage to be sprayed should be injected with arsenal or other appropriate herbicide (see “Hack and Squirt”). This can be done at any time, but is least effective in December to mid January, during spring sap flow, and during drought. If many large trees are present, it may be better to spray with a helicopter. One advantage of ground application, though, is that trees can be selectively spared for wildlife and visual purposes.

Rates for helicopter spraying for site preparation are at least 24 ounces per acre of **Chopper** (a formulation of **Arsenal**) and for release, 12 to 16 ounces **Arsenal**.

As with all pesticides, read the label carefully and apply according to recommendations. All necessary precautions should be taken to avoid environmental contamination.

It is advisable to hire a qualified vendor that can provide the herbicide, labor and expertise to apply it. A list is available from the Division of Forestry.

Pesticides recommended in this publication were registered for the prescribed uses when printed. Should a registration be cancelled, the Division of Forestry would no longer recommend it. Use of trade or brand names in this publication is for clarity and information: it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. Landowners are encouraged to contact district representatives of the companies that sell herbicides in their area.

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